

Manual for

TUBEX TREESHelters

Reference Material provided
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The TUBEX Treeshelter brings to tree planting the right environment and the proper protection to ensure rapid establishment and good early growth of trees. Elimination of all mammal damage, easier weeding and the mini-greenhouse effect combine to give newly planted trees the very best of starts.

The Treeshelter concept

Enclosing a newly planted tree inside a tube of transparent plastic was developed by the Forestry Commission. Since first demonstrating the benefits this brings, in 1979, Forestry Commission researchers have laid down over 100 field experiments and trials to test exhaustively the idea. Today treeshelters are widely accepted throughout Britain with several million being used each year.

Research has shown that enclosing a young tree in a plastic tube, about 8-12 cm across, acts as a first class fence, does no harm and almost always increases survival and early growth. The height of the tube ranges from 60cm to 1.8m depending on which animals are likely to be damaging trees on the planting site. Any transparent plastic with ultra-violet (UV) inhibitor is found to be suitable and, from work with more than 40 species, virtually every type of tree is acceptable, both broadleaves and conifers.

What a Treeshelter does

Protection

The treeshelter completely encloses the newly planted tree. This protects it from mice and voles nibbling the bark, rabbits and hares chewing foliage or clipping shoots, and browsing by deer.

On exposed sites the tree is protected from desiccating winds while it becomes established. Also the round shape of the TUBEX treeshelter, as well as being structurally very strong, minimizes wind damage to the treeshelter and hence shaking and vibration of the enclosed tree.

Weed control

Control of weeds, especially strongly competitive grasses, around newly planted trees is essential for their rapid establishment. Trees enclosed in a treeshelter can be safely weeded with herbicide without fear of damage. This is especially important for broadleaves such as oak, ash and beech, which are easily killed by misapplied herbicide. With the tree enclosed weed control becomes safe, quick and concentrated near the tree where it is most needed rather than a blanket treatment of a site.

Identified planting position

Treeshelters are easily seen, though by using appropriate tints they need not intrude into the landscape, thus quickly identifying where trees are planted. This facilitates inspection and weeding and is a major advantage in all broadleaved plantings where small trees are apt to get 'lost' among herbaceous growth.

Increased early growth

Forestry Commission experiments show that almost all tree species grow faster in treeshelters. Oak and ash especially benefit and often show more than double the height increment for the first two or three years. In addition to the benefit of full protection increased early growth is probably due to higher humidities and temperatures inside the treeshelter leading to improved conditions for photosynthesis. On hot summer days relative humidities remain at or near 100 per cent. Internal air temperatures may exceed 40°C in white shelters in the open but leaf surfaces are several degrees cooler. Such temperatures do no damage apart from scorching of the odd leaf pressed flat against the treeshelter surface.

Accelerated early growth reduces the time trees are at their most susceptible to frost and other damage and shortens the weeding period.

The increased growth rate slows down once the trees emerge above the top of the treeshelter and they resume normal growth.

These four benefits of growing trees in treeshelters greatly improve the prospects of satisfactory tree planting whatever the scale.

Using the TUBEX Treeshelter

where

Treeshelters are suitable for all kinds of tree planting. This includes planting of single trees, groups, or larger blocks. In all situations the treeshelter can substitute for the protection given by a fence though for large plantings of several hectares and many thousands of trees fencing may be somewhat cheaper. Treeshelters are suitable for use with planting in woodlands, on farms, areas of rough ground, spare corners, in gardens, enrichment of gaps, in underplanting etc.

A treeshelter can also be used to protect and nurture naturally occurring seedlings and for growing vegetables such as tomatoes.

When?

In Britain tree planting is best done between October and early April. Choose a spell of damp weather; do not try to plant trees into frozen ground.

How? - and the basics of tree planting

1. Obtain healthy young trees of a kind suited to the site. Ideally trees should be seedlings or transplants about 25-45 cm tall with a thick stem. Plants with bare roots are best though ones in containers can be used. Do not try and plant thin spindly plants or ones that are damaged, unhealthy, lacking in roots or with a poor buds or which have started to flush. Obtain plants from a reputable nursery.

2. On purchase or receipt of plants provide every care for them. Check that they are healthy and alive by examining a proportion of them. Dry and brittle shoots, damage, and a stem which is brown just under the bark and not greenish all indicate poor health or dead tissue. Handle plants with care - avoid dropping them, always keep them out of the sun and in the cool, and do not pile many bags of plants on top of each other. Ideally plants trees on the day they are obtained from the nursery if the weather is favorable - cool and damp. Failing this, store temporarily sealed in their bags (maximum 3 weeks) in a cool shed and plant them as soon as possible.

3. Choose most suitable TUBEX treeshelter - see later. Obtain stakes equal in length to the treeshelter to be used. Square 30x30 mm(1 1/2") sawn battens of treated wood, obtainable from most timber suppliers, or cleft chestnut palings are suitable for most sites. On very exposed sites, stony soils or where livestock graze stronger, larger diameter stakes may be advisable.

4. At the planting position drive stake vertically into ground to at least 25 cm depth.

5. Next to the stake, preferably on its south side, slit or notch soil with spade or mattock or dig a small pit. Insert or place the tree's roots carefully so that the root collar is level with the ground surface and the tree is about 5 cm from the stake; make sure the tree is vertical. Close the slit/notch or refill the pit making sure to firm the soil in place.

6. Place the treeshelter over the newly planted or naturally occurring young tree. If necessary trim back or gently bend up any side branches. Orientate the treeshelter so the preformed recess is snug against the stake. Secure the treeshelter loosely to the stake using the plastic ties and then stamp it down to seat the base of the treeshelter into the soil - this can easily be done by hammering or pressing down on a piece of wood laid across the splayed top of the TUBEX treeshelter. Pull ties as tight as possible around the stake. Seating the treeshelter 2-3 cm into the ground seals the base and further strengthens the structure.

The TUBEX treeshelter is quickly and easily erected and comes supplied fully assembled and ready for immediate use.

7. In general trees are planted no more than 3 m apart, and more usually about 2 - 2.5 m to establish about 1500 - 2500 trees per hectare, where timber production is the aim. This spacing provides sufficient trees to stock the ground to develop forest conditions reasonably quickly and give sufficient choice for final crop trees during the course of thinnings.

Small or single tree plantings not intended for timber production can, of course, be at any spacing.

8. No further attention will be needed, though briefly check tree and tightness of treeshelter tie when carrying out weed control. A TUBEX treeshelter requires no maintenance but the newly established trees do. Especially important is weeding which should aim to kill weeds within at least half a meter radius of the new tree, with herbicide or by mulching, for the first 3 - 5 years. This minimizes competition for moisture and prevents overtopping.

9. It is recommended that the treeshelter is left in place around a tree until it breaks down naturally after 7 or 8 years.

Choosing the right TUBEX Treeshelter

Size

TUBEX Treeshelters are available in any length, but standard sizes are 60 cm, 80 cm, 120 cm and 180 cm. Choose length based on protection needs:

- 60 cm - for protection against rabbits, hares and all small mammals
- 120 cm - also protects against roe, other small deer and sheep
- 180 cm - tallest treeshelters needed where fallow or red deer occur.

TUBEX Treeshelters come in nested stacks of 4. The small differences in internal diameter, minimum 9 cm will not affect tree growth and survival.

Color

TUBEX Treeshelters are available in any color, but standard tints are ivory (white, translucent), light green and pale brown.

Pale brown blends most sympathetically in the landscape, but ivory should be used when planting in shaded or partially shaded places.

Strength

A reinforced treeshelter is available for tree planting where livestock damage may be a problem.

Technical specifications of TUBEX Treeshelters

Plastic

Top quality polypropylene with Ultra-violet (UV) stabilizer is supplied by ICL from which the twin-walled extruded tube are made. Corrugated polypropylene is the most widely used treeshelter material in Britain and has been used in Forestry Commission trials since 1981.

Shape

Extruded tube with preformed recess for stake and splayed top to prevent bark abrasion on stem once trees emerge. No corners except in the recess where plastic 'rods' run the length of the treeshelter for special thickening for strength and to prevent the nylon tie tearing the wall. This recess nestles snugly into any square edged stake and fully prevents movement or twisting of the treeshelter in the wind.

Attachments

TUBEX treeshelters come with self-locking black nylon ties, 25 cm (10") long, inserted ready for securing the treeshelter to the stake. For securing the treeshelter to a large stake an extra tie can simply be added on to double the length or more as needed. No wires or other attachments are needed.

TUBEX treeshelters can be supplied with the correct stakes if required.

Lifespan

Design life of TUBEX treeshelters in Britain is 5 years minimum; 7 years is average life before significant degrade. The black nylon ties have high UV and weather resistance and will last even longer.

When the treeshelter finally breaks down it will degrade into small pieces or powder as a result of the action of ultraviolet light.

WARNING: The TUBEX Treeshelter is an excellent aid to tree establishment but it should not be used as a means of making up for bad practices - using poor, sickly plants, bad handling and planting, inadequate weed control etc.

More information about research into treeshelters may be obtained from:

The Principal Silviculturist,
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TUBEX Treeshelter, 1.2 m tall, secured to a Sweet chestnut stake which has been located on the north side of the treeshelter. Note tough black nylon ties and gently splayed top to avoid damage to bark once the tree grows out of the top. Leaves of wild cherry can be seen half way up - photograph taken in early May, 8 weeks after planting.